



## ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

Sub F

DATE: November 14, 1984

TO: Division File

FROM: Perry Mann - Southern Region

SUBJECT: LPC 1190200002 - Madison County - East Alton/Olin - ILD006271696  
Follow-up Subpart F Inspection dated October 31, 1984

EPA Region 5 Records Ctr.



382819

Margo Dilday and myself conducted a follow-up inspection at the subject facility on October 31, 1984 in order to determine compliance with the Subpart F Groundwater Monitoring requirements. Mr. Wayne Galler of Olin accompanied us during the on-site inspection.

Since the last inspection (July 12, 1984), Olin has completed implementing the groundwater monitoring program, which was developed in accordance with their approved proposal and compliance schedule. The information from hydrogeologic investigation, the Groundwater Quality Assessment Program, and the Sampling/Analyses Plan were submitted on August 27, 1984.

It was determined that the facility was in compliance with Subpart F requirements on the subject inspection date. Samples were collected on September 19, 1984 from the monitoring wells for initial background analyses (1st quarter). Environmental Analyses collects the samples and does the analytic work for Olin. The sampling protocol utilized follows the general procedures outlined in the Sampling and Analyses Plan prepared by Olin dated August 1984. Mr. Galler indicated that this plan is currently undergoing revision such that it is being made more specific and comprehensive. Once completed, a copy of this document shall be submitted to this office for review.

A total of seven wells were installed adjacent to the regulated impoundment; one well OMW101 is not being monitored for water quality under the Subpart F program, although water levels are still collected for evaluation. OMW-105 and OMW-106 are designated as upgradient wells; OMW-102, 103 and 104 are down-gradient wells.

All apparent violations cited in the November 10, 1983 CIL were determined to be resolved as of this October 31, 1984 inspection date.

PCM:jlr

cc: Southern Region File  
Mark Haney✓



DATE: November 14, 1984

TO: Division File *GCM*

FROM: Perry Mann - Southern Region

SUBJECT: LPC 1190200002 - Madison County - East Alton/Olin - ILD006271696  
Subpart F Inspection dated October 31, 1984

Margo Dilday and myself conducted an inspection at the subject facility on October 31, 1984 in order to determine compliance with the Subpart F Ground-water Monitoring requirements. Mr. Wayne Galler of Olin, accompanied us during the inspection.

The regulated unit consists of a surface impoundment with a one million gallon storage capacity, which Olin designates as being the "Zone 6 Emergency Holding Lagoon". During periods of high precipitation over short durations, Olin diverts both stormwater runoff from the plant, as well as wastewater overflow from their wastewater treatment facility at Zone 6 to this impoundment until water can again be directed to the wastewater treatment facility.

The facility implemented a Subpart F monitoring program under a compliance schedule which was completed in August 1984. Seven wells were installed although only six are being monitored for water quality and indicator parameters. Initial background sampling was conducted on September 19, 1984. Completion of background sampling will be finalized in June 1985.

The following information provides clarification of the Subpart F inspection checklist, where deemed necessary.

#### Appendix A-1

3. This facility has two upgradient wells. These are OMW-5 and OMW-6.
  4. This facility has four wells located downgradient; These are OMW-2, OMW-3, and OMW-4. A fifth well OMW-1 exists, but is not being monitored except for water level information.
- 9.b. Initial background data will not be completed until June 1985.

#### Appendix A-2

Not Applicable.

#### Appendix A-3

Not Applicable.

Appendix B

- 6.1 Geology below the impoundment generally consists of some clay overlying approximately 30 feet of sand. A lower clay unit of unknown regional continuity which lie below the aforementioned sand, directly overlies a thin sand unit, below which a clayey glacial till occurs. The 30 feet sand is identified as the uppermost aquifer lying below the site. While this sand aquifer occurs generally between the 405 to 435 MSL elevation, the water table occurs between the 415 to 417 elevation.

The monitoring program developed and installed is appropriate for the unconfined aquifer being monitored given the screened zones in the wells at this time. However, if the water table level rises above the screened zone being monitored i.e. the 420 MSL elevation, the installation of additional wells screened at shallower elevation would be necessary for the facility to comply with 725.191; this is especially apparent given that the groundwater flow rate at this facility is relatively rapid (800 ft/yr.).

- 7.2 Sampling procedures are described in Olin's "Groundwater Sampling and Analysis Plan", dated August 1984. While this document may be considered to be minimally adequate, Olin indicated that this document is currently being revised to expand the specificity and detail of the sampling protocol which Olin's contractor, Environmental Analyses, utilizes. In the interview with Mr. W. Galler, of Olin, a copy of the revised sampling plan was requested to be sent to this office for review. Mr. Galler indicated that Olin would comply with this request.

Appendix C

Not Applicable

Appendix D

Not Applicable

PCM:jlr

cc: Southern Region File ✓  
Mark Haney

APPENDIX A-1

FACILITY INSPECTION FORM FOR COMPLIANCE WITH INTERIM  
STATUS STANDARDS COVERING GROUND-WATER MONITORING

Company Name: Olin - Main Plant; IEPA I.D. Number: LPC 11962000  
 Company Address: Shamrock Street; USEPA I.D. Number: ILD 006271691  
East Alton, Illinois Inspector's Name: P.C. Mansel  
62024  
 Company Contact/Official: Wayne Galle; Branch/Organization: DLPC - Collinsville  
 Title: Environmental Engineer; Date of Inspection: 10/31/84

Yes      No      Unknown      Wavied

Type of facility: (check appropriately)

- a) surface impoundment
- b) landfill
- c) land treatment facility
- d) disposal waste pile\*

X          
        X  
        X  
        X

Ground-Water Monitoring Program

1. Was the ground-water monitoring program reviewed prior to site visit?  
If "No,"
  - a) Was the ground-water program reviewed at the facility prior to site inspection?
2. Has a ground-water monitoring program (capable of determining the facility's impact on the quality of groundwater in the uppermost aquifer underlying the facility) been implemented? 725.190(a)

X          
            
X                        

\*Listed separate from landfill for convenience of identification.

Yes      No      Unknown      Wavied

3. Has at least one monitoring well been installed in the uppermost aquifer hydraulically upgradient from the limit of the waste management area? 725.191(a)(1)

X                        

a) Are ground-water samples from the uppermost aquifer, representative of background ground-water quality and not affected by the facility (as ensured by proper well number, locations and depths?)

X            

4. Have at least three monitoring wells been installed hydraulically downgradient at the limit of the waste handling or management area? 725.191(a)(2)

X            

a) Do well numbers, locations and depths ensure prompt detection of any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer?

X                        

5. Have the locations of the waste management areas been verified to conform with information in the ground-water program?

X                        

a) If the facility contains multiple waste management components, is each component adequately monitored?

N/A

6. Do the numbers, locations, and depths of the ground-water monitoring wells agree with the data in the ground-water monitoring system program?  
If "No," explain discrepancies.

X                        

7. Well completion details. 725.191(c)

a) Are wells properly cased?  
b) Are wells screened (perforated) and packed where necessary to enable sampling at appropriate depths?  
c) Are annular spaces properly sealed to prevent contamination of ground-water?

X                        

X                        

X

	<u>Yes</u>	<u>No</u>	<u>Unknown</u>	<u>Wavied</u>
8. Has a ground-water sampling and analysis plan been developed? 725.192(a)	<u>X</u>	_____	_____	
a) Has it been followed?	<u>X</u>	_____	_____	
b) Is the plan kept at the facility?	<u>X</u>	_____	_____	
c) Does the plan include procedures and techniques for:				
1) Sample collection?	<u>X</u>	_____		
2) Sample preservation?	<u>X</u>	_____		
3) Sample shipment?	<u>X</u>	_____		
4) Analytical procedures?	<u>X</u>	_____		
5) Chain of custody control?	<u>X</u>	_____		
9. Are the required parameters in ground-water samples being tested quarterly for the first year? 725.192(b) and 725.192(c)(1)	<u>X</u>	_____		
a) Are the ground-water samples analyzed for the following:				
1) Parameters characterizing the suitability of the ground-water as a drinking water supply? 725.192(b)(1)	<u>X</u>	_____		
2) Parameters establishing ground-water quality? 725.192(b)(2)	<u>X</u>	_____		
3) Parameters used as indicators of ground-water contamination? 725.192(b)(3)	<u>X</u>	_____		
(i) For each indicator parameter are at least four replicate measurements obtained at each upgradient well for each sample obtained during the first year of monitoring? 725.192(c)(2)	<u>X</u>	_____		
(ii) Are provisions made to calculate the initial background arithmetic mean and variance of the respective parameter concentrations or values obtained from the upgradient well(s) during the first year? 725.192(c)(2)	<u>X</u>	_____		

Yes      No      Unknown      Wavied

b) For facilities which have completed first year ground-water sampling and analysis requirements:

- 1) Have samples been obtained and analyzed for the ground-water quality parameters at least annually? 725.192(d)(1)
- 2) Have samples been obtained and analyzed for the indicators of ground-water contamination at least semi-annually? 725.192(d)(2)

N/A

N/A

c) Were ground-water surface elevations determined at each monitoring well each time a sample was taken? 725.192(e)

X            

d) If it was determined that modification of the number, location or depth of monitoring wells was necessary, was the system brought into compliance with 725.191(a)? 725.193

N/A

10. Has an outline of a ground-water quality assessment program been prepared? 725.193(a)

X            

a) Does it describe a program capable of determining:

- 1) Whether hazardous waste or hazardous waste constituents have entered the ground-water?
- 2) The rate and extent of migration of hazardous waste or hazardous waste constituents in ground-water?
- 3) Concentrations of hazardous waste or hazardous waste constituents in ground-water?

X            

X            

X            

b) Were records kept of the analyses and evaluations, specified in the ground-water quality assessment (throughout the active life of the facility)? 725.194(b)(1)

X            

- 1) If a disposal facility, were(are) records kept through the post-closure period as well?

X

	<u>Yes</u>	<u>No</u>	<u>Unknown</u>	<u>Wavied</u>
11. Have records been kept of analyses for parameters in 725.192(c) and (d)? 725.194(a)(1)	<u>X</u>	___		
12. Have records been kept of ground-water surface elevations taken at the time of sampling for each well? 725.194(a)(1)	<u>X</u>	___		
13. Have records been kept of required elevations in 725.192(e)? 725.194(a)(1)	<u>X</u>	___		

\*EPA will be proposing (Spring 1982) to replace this reporting requirement with an exception reporting system where reports will be submitted only where maximum contaminant levels or significant changes in the contamination indicators or other parameters are observed. EPA has delayed compliance stage for 14 a) above until August 1, 1982 (Federal Register, February 23, 1982, p. 7841-7842) to be coupled with exception reporting in the interim.

APPENDIX B

GROUND-WATER MONITORING AND ALTERNATE SYSTEM  
TECHNICAL INFORMATION FORM

1.0 Background Data:

Company Name: Olin - Main Plant ; EPA I.D.#: ILD006271696

Company Address: Shamrock Street

East Alton, Illinois

62024

Inspector's Name: P. C. Mann ; Date: 10/31/84

1.1 Type of facility (check appropriately):

- 1.1.1 surface impoundment ☒  
1.1.2 landfill ☐  
1.1.3 land treatment facility ☐  
1.1.4 disposal waste pile ☐

1.2 Has a ground-water monitoring system been established?

(Y/N) Y

1.2.1 Is a ground-water quality assessment program outlined or proposed? -

(Y/N) Y

If Yes,

1.2.2 Was it reviewed prior to the site visit?

(Y/N) Y

1.3 Has a ground-water quality assessment program been implemented or proposed at the site?

(Y/N) N

If yes, Appendix C, Ground-Water Quality Assessment Program Technical Information Form must be utilized also.

2.0 Regional/Facility Map(s)

2.1 Is a regional map of the area, with the facility delineated, included?

(Y/N) Y

If yes,

2.1.1 What is the origin and scale of the map? Scrap of maps  
with different scales used for each

2.1.2 Is the surficial geology adequately illustrated?

(Y/N) Y

2.1.3 Are there any significant topographic or surficial features evident?

(Y/N) Y

If yes, describe Facility is located within Mississippi River Valley physiographic area known as the Northern American Bottoms

2.1.4 Are there any streams, rivers, lakes, or wet lands near the facility?

(Y/N) Y

If yes, indicate approximate distances from the facility ~ 2.5 miles from Mississippi River; ~ 200 ft from Wood River

2.1.5 Are there any discharging or recharging wells near the facility?

(Y/N) Y

If yes, indicate approximate distances from the facility. Significant cone of depression whose center is ~ 2 1/4 miles away

2.2 Is a regional hydrogeologic map of the area included? (This information may be shown on 2.1)

(Y/N) Y

If yes:

2.2.1 Are major areas of recharge/discharge shown?

(Y/N) N

If yes, describe. \_\_\_\_\_

2.2.2 Is the regional ground-water flow direction indicated?

(Y/N) Y

2.2.3 Are the potentiometric contours logical? If not, explain. \_\_\_\_\_

(Y/N) Y

2.3 Is a facility plot plan included?

(Y/N) Y

2.3.1 Are facility components (landfill areas, impoundments, etc.) shown?

(Y/N) Y

2.3.2 Are any seeps, springs, streams, ponds, or wetlands indicated?

(Y/N) Y

2.3.3 Are the locations of any monitoring wells, soil borings, or test pits shown?

(Y/N) Y

2.3.4 Is the facility a multi-component facility?

(Y/N) N

If yes:

2.3.4.1 Are individual components adequately monitored?

(Y/N) \_\_\_\_\_

2.3.4.2 Is a Waste Management Area delineated?

(Y/N) \_\_\_\_\_

2.4 Is a site water table (potentiometric) contour map included?

(Y/N) Y

If yes,

2.4.1 Do the potentiometric contours appear logical based on topography and presented data? (Consult water level data)

(Y/N) Y

2.4.2 Are groundwater flowlines indicated?

(Y/N) Y

2.4.3 Are static water levels shown?

(Y/N) Y

2.2.4 May hydraulic gradients be estimated?

(Y/N) Y

2.4.5 Is at least one monitoring well located hydraulically upgradient of the waste management area(s)?

(Y/N) Y

2.4.6 Are at least three monitoring wells located hydraulically downgradient of the waste management area(s)?

(Y/N) Y

2.4.7 By their location, do the upgradient wells appear capable of providing representative ambient groundwater quality data?

(Y/N) Y

If no, explain. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

3.0 Soil Boring/Test Pit Details

3.1 Were soil borings/test pits made under the supervision of a qualified professional?

(Y/N) Y

If yes,

3.1.1 Indicate the individual(s) and affiliation(s): J. Mathes & Assoc.  
Conrad Lawrence - Hydrogeologist

3.1.2 Indicate the drilling/excavating contractor, if known J. Mathes  
& Assoc.

3.2 If soil borings/test pits were made, indicate the method(s) of drilling/excavating:

- Auger (hollow or solid stem) X
- Mud rotary
- Air rotary
- Reverse rotary
- Cable tool
- Jetting
- Other, including excavation (explain)

3.3 List the number of soil borings/test pits made at the site

3.3.1 Pre-existing

indeterminate

3.3.2 For RCRA compliance

6

3.4 Indicate borehole diameters and depths (if different diameters and depths use TABLE B-1).

3.4.1 Diameter:       

3.4.2 Depth:       

3.5 Were lithologic samples collected during drilling?

(Y/N) Y

If yes,

3.5.1 How were samples obtained? (Check method(s))

- Split spoon X
- Shelby tube, or similar
- Rock coring
- Ditch sampling
- Other (explain)

INFORMATION TABLE B-1

BORING NO.	DEPTH	DIAMETER
B-OMW-101	45.4 Ft.	6 inch
B-OMW-102	35.5 Ft.	6 inch
B-OMW-103	35.5 Ft.	6 inch
B-OMW-104	38.0 Ft.	6 inch
B-OMW-105	33.0 Ft.	6 inch
B-OMW-106	30.5 Ft.	6 inch

3.5.2 At what interval were samples collected? continuous for initial  
20-25 ft then 25 ft intervals

3.5.3 Were the deposits or rock units penetrated described? (boring logs, etc.) (Y/N) y

3.6 If test pits were excavated at the site, describe procedures. N/A

#### 4.0 Well Completion Detail

4.1 Were the wells installed under the supervision of a qualified professional? (Y/N) y

If yes:

4.1.1 Indicate the individual and affiliation, if known see 3.1.1

4.1.2 Indicate the well construction contractor, if known see 3.1.2

4.2 List the number of wells at the site

4.2.1 Pre-existing indeterminate

4.2.2 For RCRA Compliance 6

4.3 Well construction information (fill out INFORMATION TABLE B-2)

4.3.1 If PVC well screen or casing is used, are joints (couplings):

- Glued on
- Screwed on

X

4.3.2 Are well screens sand/gravel packed? (Y/N) y

INFORMATION TABLE B-2

WELL NO.		OMW-101	OMW-102	OMW-103	OMW-104	OMW-105	OMW-106
GROUND ELEVATION		438.9	437.7	439.5	439.5	437.3	436.5
TOTAL DEPTH		32.0	32.0	33.0	33.0	30.0	29.5
WELL CASING	TYPE MATERIAL	PVC	PVC	PVC	PVC	PVC	PVC
	DIAMETER	2"	2"	2"	2"	2"	2"
	LENGTH	24.3	24.4	26.0	25.4	22.5	21.8
	STICK-UP	2.3	2.4	3.0	2.4	2.5	2.3
	TOP ELEVATION	441.2	440.1	442.5	441.9	439.8	438.8
	BOTTOM ELEVATION	416.9	415.7	416.5	416.5	417.3	417.0
WELL SCREEN	DEPTH TOP/BOTTOM	22.0 32.0	22.0 32.0	23.0 33.0	23.0 38.0	20.0 30.0	19.5 29.5
	TYPE MATERIAL	PVC	PVC	PVC	PVC	PVC	PVC
	DIAMETER	2"	2"	2"	2"	2"	2"
	LENGTH	10.0	10.0	10.0	10.0	10.0	10.0
	SLOT SIZE	.010"	.010"	.010"	.010"	.010"	.010"
	TOP ELEVATION	416.9	415.7	416.5	416.5	417.3	417.0
	BOTTOM ELEVATION	406.9	405.7	406.5	406.5	407.3	407.0
OPEN HOLE OR SAND/GRAVEL PACK	DEPTH TOP/BOTTOM	17.0 45.4	5.0 35.0	4.5 35.5	6 36.0	4.5 33.0	6.5 30.5
	DIAMETER	6"	6"	6"	6"	6"	6"
	LENGTH	18.4	30.0	31.0	32.0	28.5	12.0
	TOP ELEVATION	421.9	432.7	435.0	433.5	433.3	418.0
	BOTTOM ELEVATION	403.5	402.7	399.5	401.5	404.8	406.0

(Y/N) Y

- bentonite slurry
- Cement grout
- Other (explain)

### ● Thicknesses of seals

**If yes, describe how:**

(Y/N) Y

- How thick? 2-3 ft.

(Y/N) Y

- **Do they lock?**

(Y/N) Y

(Y/N) Y

- Air lift pumping
- Pumping and surging
- Jetting
- Bailing
- Other (explain)

~~1~~ removed 15 well volumes

**5.1 Has the extent of the uppermost saturated zone (aquifer) in the facility area been defined?**

(Y/N) Y

**5.1.1 Are soil boring/test pit logs included?**

$$(Y/N) \frac{Y}{-}$$

**5.1.2 Are geologic cross-sections included?**

(Y/N) Y

5.2 Is there evidence of confining (low permeability) layers beneath the site?

(Y/N) N

If yes,

5.2.1 Is the areal extent and continuity indicated?

(Y/N) \_\_\_\_\_

5.2.2 Is there any potential for saturated conditions (perched water) to occur above the uppermost aquifer? (Y/N) \_\_\_\_\_

If yes, give details: \_\_\_\_\_

a) Should or is this perched zone being monitored?

(Y/N) \_\_\_\_\_

Explain \_\_\_\_\_

5.2.3 What is the lithology and texture of the uppermost saturated zone (aquifer)? \_\_\_\_\_

5.2.4 What is the saturated thickness, if indicated? \_\_\_\_\_

5.3 Were static water levels measured?

(Y/N) y

If yes,

5.3.1 How were the water levels measured (check method(s)).

- Electric water sounder \_\_\_\_\_
- Wetted tape \_\_\_\_\_
- Air line \_\_\_\_\_
- Other (explain) \_\_\_\_\_

x measured at the bailer lines after sampling with the bailer

5.3.2 Do fluctuations in static water levels occur?

(Y/N) y

If yes,

5.3.2.1 Are they accounted for (e.g. seasonal, tidal, etc.)?

(Y/N) y

If yes, describe:

seasonal; groundwater pumping from wells and river stage levels in Mississippi and Wood Rivers

5.3.2.2 Do the water level fluctuations alter the general ground-water gradients and flow directions?

(Y/N) Y

If yes,

5.3.2.3 Will the effectiveness of the wells to detect contaminants be reduced?

(Y/N) indeterminate

Explain \_\_\_\_\_

\_\_\_\_\_

5.3.2.4 Based on water level data, do any head differentials occur that may indicate a vertical flow component in the saturated zone?

(Y/N) N

If yes, explain \_\_\_\_\_

\_\_\_\_\_

5.4 Have aquifer hydraulic properties been determined?

(Y/N) Y

If yes,

5.4.1 Indicate method(s):

- Pumping tests Y
- Falling/constant head tests \_\_\_\_\_
- Laboratory tests (explain) \_\_\_\_\_

\_\_\_\_\_

5.4.2 If determined, what are the values for:

- Transmissivity \_\_\_\_\_
- Storage coefficient \_\_\_\_\_
- Leakage \_\_\_\_\_
- Permeability \_\_\_\_\_
- Porosity  $6.6 \times 10^{-2}$  to  $2.6 \times 10^{-1}$
- Specific capacity \_\_\_\_\_

5.4.3 In cases where several tests were undertaken, were discrepancies in the results evident?

(Y/N) N

If yes, explain \_\_\_\_\_

\_\_\_\_\_

5.4.4 Were horizontal ground-water flow velocities determined?

(Y/N) Y

If yes, indicate rate of movement  $\approx 800$  Feet per year

\_\_\_\_\_

6.0 Well Performance

6.1 Are the monitoring wells screened in the uppermost aquifer? (Y/N) Y

6.1.1 Is the full saturated thickness screened? (Y/N) N

6.1.2 For single completions, are the intake areas in the:  
(check appropriate levels)

- Upper portion of the aquifer
- Middle of the aquifer
- Lower portion of the aquifer

X  
    
  

6.1.3 For well clusters, are the intake areas open to different portions of the aquifer? (Y/N) N/A

6.1.4 Do the intake levels of the monitoring wells appear to be justified due to possible contaminant density and groundwater flow velocity? (Y/N) Y

7.0 Ground-Water Quality Sampling

7.1 Is a sampling (groundwater quality) program and schedule included? (Y/N) Y

7.2 Are sample collection field procedures clearly outlined? (Y/N) see memorandum

7.2.1 How are samples obtained: (check method(s))

- Air lift pump
- Submersible pump
- Positive displacement pump
- Centrifugal pump
- Peristaltic or other suction-lift pump
- Bailer
- Other (describe)

    
    
    
    
    
X  
  

7.2.2 Are all wells sampled with the same equipment and procedures? (Y/N) Y

If no, explain   

    
  

7.2.3 Are adequate provisions included to clean equipment after sampling to prevent cross-contamination between wells? (Y/N) Y

7.2.4 Are organic constituents to be sampled?

(Y/N) N

If yes,

7.2.4.1 Are samples collected with equipment to minimize absorption and volatilization?

(Y/N) \_\_\_\_\_

If yes,

Describe equipment \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

8.0 Sample Preservation and Handling

8.1 Have appropriate sample preservation and preparation procedures been followed (filtration and preservation where appropriate)?

(Y/N) y

8.2 Are samples refrigerated?

(Y/N) y

8.3 Are EPA recommended sample holding period requirements adhered to?

(Y/N) indeterminate

8.4 Are suitable container types used?

(Y/N) y

8.5 Are provisions made to store and ship samples under cold conditions (ice packs, etc.)?

(Y/N) y

8.6 Is a chain of custody control procedure clearly defined?

(Y/N) N

8.7 Is a specific chain of custody form illustrated?

(Y/N) y

If yes,

8.7.1 Will this form provide an accurate record of sample possession from the moment the sample is taken until the time it is analyzed?

(Y/N) y

9.0 Sample Analysis and Record Keeping

9.1 Is sample analysis performed by a qualified laboratory?

(Y/N) y

Indicate lab Environmental Analysis

9.2 Are analytical methods described in the records?

(Y/N) referenced

9.2.1 Are analytical methods acceptable to EPA?

(Y/N) y

9.3 Are the required drinking water suitability parameters tested for?

(Y/N) y

9.4 Are the required groundwater quality parameters tested for?

(Y/N) y

9.5 Are the required groundwater contamination indicator parameters tested for? (Y/N) Y

9.6 Are any analytical parameters determined in the field? (Y/N) Y

Identify:

- pH X
- Temperature Y
- Specific conductance Y
- Other (describe) \_\_\_\_\_

9.7 Is a plan included to record information about each sample collected during the groundwater monitoring program? (Y/N) Y

9.7.1 Are field activity logs included? (Y/N) Y

9.7.2 Are laboratory results included? (Y/N) Y

9.7.3 Are field procedures recorded? (Y/N) Y

9.7.4 Are field parameter determinations included? (Y/N) Y

9.7.5 Are the names and affiliation of the field personnel included? (Y/N) Y

9.8 Are statistical analyses planned or shown for all water quality results where necessary? (Y/N) Y

9.8.1 Is an analysis program set-up which adheres to EPA guidelines? (Y/N) Y

9.8.2 Is Student's t-test utilized? (Y/N) Y  
If other evaluation procedure used, identify \_\_\_\_\_

9.8.3 Are provisions made for submitting analysis reports to the Regional Administrator? (Y/N) Y

#### 10.0 Site Verification

10.1 Plot Plan indicating the locations of various facility components, ground-water monitoring wells, and surface waters? (Y/N) Y

10.1.1 Is the plot plan used for the inspection the same as in the monitoring program plan documentation? (Y/N) Y

If not, explain \_\_\_\_\_

10.1.2 Are all of the components of the facility identified during the inspection addressed in the monitoring program documentation? (Y/N) y

If not, explain \_\_\_\_\_

10.1.3 Are there any streams, lakes or wetlands on or adjacent to the site? (Y/N) y

If yes, indicate distances from waste management areas \_\_\_\_\_

≈ 2.5 miles from Mississippi River; ≈ 200 ft. from Wood River

10.1.4 Are there any signs of water quality degradation evident in the surface water bodies? (Y/N) N

If yes, explain \_\_\_\_\_

10.1.5 Is there any indication of distressed or dead vegetation on or adjacent to the site? (Y/N) N

If yes, explain \_\_\_\_\_

10.1.6 Are there any significant topographic or surficial features on or near the site (e.g., recharge or discharge areas)? (Y/N) y

If yes, explain significant cone of depression where center is 2 1/4 miles away

10.1.7 Are the monitor well locations and numbers in agreement with the monitoring program documentation? (Y/N) y

If no, explain \_\_\_\_\_

10.1.7.1 Were locations and elevations of the monitor wells surveyed into some known datum? (Y/N) y

If not, explain \_\_\_\_\_

10.1.7.2 Were the wells sounded to determine total depth below the surface?

(Y/N) Y

If not, explain \_\_\_\_\_

10.1.7.3 Were discrepancies in total depth greater than two feet apparent in any well?

(Y/N) Y

If yes, explain \_\_\_\_\_

10.1.8 Was ground water encountered in all monitoring wells?

(Y/N) Y

If not, indicate which well(s) were dry \_\_\_\_\_

10.1.9 Were water level elevations measured during the site visit?

(Y/N) N

If yes, indicate well number and water level elevation \_\_\_\_\_

If not, explain \_\_\_\_\_